

Remarks

Applicants have received and carefully reviewed the Office Action mailed February 27, 2007. Claims 59 and 60 have been canceled without prejudice, leaving claims 1-58 and 61-71 pending. Support for the amendments and new claim is found in the specification, claims, and drawings as originally filed. No new matter has been added. Reconsideration and allowance of the pending claims are respectfully requested.

Drawing Objections

The drawings have been objected to because reference character 850 in Figure 8C is not mentioned in the specification. The specification has been amended to include reference character 850 as the normal return time described on page 21, line 9. No new matter has been added. Withdrawal of the objection is respectfully requested.

Objection to the Specification

The specification is objected to for various formalities. The specification has been amended to correct the typographical errors. Withdrawal of the objections is respectfully requested.

Rejection under 35 U.S.C. § 112, second paragraph

Claims 21, 55, and 57 are rejected as being indefinite. Claims 21 and 55 have been amended to correct the grammatical errors. The Examiner suggests that "heating and/or cooling" in claim 57 should be changed to "or" to clearly set them as alternatives. The phrase "and/or" is properly used in this claim to signify that the HVAC system has a fan that normally operates during heating and cooling, or that the HVAC system has a fan that normally operates during heating or cooling. Applicants submit that the claim is definite as written. Reconsideration and withdrawal of the rejection are respectfully requested.

Rejections under 35 U.S.C. § 102(e) and (b)

Claims 54-57 are rejected as being anticipated by Alles (US 6,983,889). Independent claim 54, as amended, recites a method for controlling an HVAC system including the steps of deactivating at least a first part of the HVAC system to not modify and control an environmental condition with respect to a first set point, monitoring the environmental condition and automatically activating that first part of the HVAC system to again modify the environmental condition if the condition passes a second set point.

Alles does not appear to teach such method steps. Alles appears to suggest a conventional method in which a temperature set point is set, and once the temperature reaches a threshold level, part of an HVAC system (e.g. heating part) is deactivated so as to not regulate the temperature, and automatically activating a different part of the HVAC system (e.g. cooling part) to modify the temperature if the temperature passes a second, different set point. As shown in Fig. 21 of Alles, a first set point is a temperature above which the cooling part of the HVAC system will operate and a second set point is a temperature below which the heating part of the HVAC system will operate. In the system and method of Alles (referring to FIG. 21, window 2110 for illustration), the cooling part of the HVAC system is deactivated when the temperature falls below cooling set point of 76 degrees, and the heating part is activated when the temperature drops below the heating set point of 68 degrees.

As can readily be seen, in the system of Alles, the same part of the HVAC system is not deactivated and then automatically activated in response to an environmental condition passing first and second different set points, as is recited in independent claim 54. Instead, Alles appears to teach the different parts of the HVAC system (heating and cooling parts) each respond to their own temperature set point, and one part of the HVAC system does not respond to the set point of the other part. As such, Alles does not appear to teach each and every element of independent claim 54, or the claims dependent thereon.

Regarding independent claim 57, the Examiner asserts that Alles teaches overriding the fan for a time corresponding to the time indicator provided by the user and returning to normal fan operation after the time expires. Applicants respectfully disagree. Alles appears to teach the user selecting times for heating and cooling, but for the fan (air circulation), it appears that the

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user selects one of "off", "mid", and "hi" modes, with the actual fan run time dependent on the temperature (and not after a time expires) in the room or building. See column 32, lines 6-18. Further, the operation of the fan in Alles appears to be controlled as part of the regular schedule, and therefore does not return to normal fan operation after a time expires, as recited in claim 57. In fact, Alles does not appear to teach anything regarding overriding the fan for a period of time provided by the user, as recited in claim 57. Alles thus does not appear to teach each and every element of independent claim 57. Reconsideration and withdrawal of the rejection are respectfully requested.

Claims 66-71 are rejected as being anticipated by Ehlers (US 7,130,719). Applicants respectfully disagree. Independent claim 66, as amended, recites a method for controlling an HVAC system including the steps of controlling a first environmental condition, sensing that first environmental condition outside the structure, and adjusting the first control set point if that first environmental condition outside of the structure passes a predetermined value. Ehlers appears to teach setting a temperature set point corresponding to a maximum inside temperature, and then monitoring humidity, and adjusting the temperature set point based on the humidity level that is sensed inside the building. See column 30, line 65 through column 31, line 23. Ehlers thus appears to control a first environmental condition (temperature) using a first set point, sensing a second environmental condition (humidity) inside the structure, and adjusting the first set point if the second condition inside the structure passes a value. The method of Ehlers is thus quite different from the method recited in independent claim 66. As such, Ehlers does not appear to teach each and every element of independent claim 66 or the claims dependent thereon.

Regarding independent claim 71, the Examiner asserts that Ehlers teaches an HVAC system having a duty cycle that varies with the environmental condition outside the structure, and a method involving the step of sensing the duty cycle of the HVAC system and adjusting the first control set point if the duty cycle of the HVAC system exceeds a predetermined value (emphasis added). The Examiner points to column 30, line 65 through column 31, line 23 for support. Applicants have reviewed the cited portion of Ehlers and have found no such teaching.

The cited portion of Ehlers appears to teach a system that “senses the indoor humidity level” and “maintains a relationship between the temperature and humidity level sensed”. See column 31, lines 1-3. Notably, there does not appear to be even a mention of the duty cycle of the HVAC system. As such, the cited portion of Ehlers cannot teach, disclose or suggest the steps of “sensing the duty cycle of the HVAC system”, or adjusting the first control set point if the duty cycle of the HVAC system exceeds a predetermined value”, as recited in claim 71. Instead, and as noted above, Ehlers appears to “sense the indoor humidity level”, and from that, “maintains a relationship between the temperature and humidity level sensed”. Ehlers thus does not appear to teach each and every element of claim 71. Reconsideration and withdrawal of the rejection are respectfully requested.

Claim 58 is rejected as being anticipated by Riley (5,395,042). Claim 58, as amended, recites a method for controlling an HVAC system having a controller including a user interface, including the steps of detecting an indication, based on user input into a user interface, that a window is or has been opened, deactivating part of the HVAC system to not modify and control an environmental condition of the inside space, detecting an indication, also based on user input into the user interface, that the window is or has been closed, and then activating the part of the HVAC system that was deactivated. Riley appears to teach a method in which doors are hardwired to disable the HVAC system when the door is ajar or open. Riley also appears to teach a system in which, after a fixed period of operation, a determination is made whether the temperature in the space is changing according to the program, and if not, the HVAC system is disabled. See column 17, line 56 through column 18, line 25. Riley does not, however, appear to teach a system in which user input into a user interface provides an indication that a window has been opened or closed, as is recited in claim 58. Riley thus does not appear to teach each and every element of claim 58. Reconsideration and withdrawal of the rejection are respectfully requested.

Rejections under 35 U.S.C. § 103(a)

Claims 1-49 are rejected as being unpatentable over Alles in view of Liebl (US 5,289,362). The Examiner asserts that Alles teaches two or more schedule override choices, referring to the schedule choices 2101 in the "Comfort-Climate" popup menu 2100 of the PDA interface shown in FIG. 21. Applicants respectfully disagree. The comfort-climate menu 2100 and the options 2101 of "sleeping", "active", "empty", and "relaxing" appear to relate to parameters that are used to program the regular schedule of Alles, and clearly are not schedule overrides to the regular schedule as suggested by the Examiner. A schedule "override", by definition, overrides the regular schedule.

More specifically, Alles appears to teach that the "Comfort-Climate" popup menu 2100 appears when a "Comfort-Climate" 2005 is selected (see Figure 20) when programming the regular schedule. That is, when programming the regular schedule via Figure 20, the user can select a "Comfort-Climate" 2005 (e.g. one of sleeping, active, empty, or relaxing) from the regular schedule, and the popup menu 2100 of Figure 21 appears. The user can then edit the set points that are associated with the "sleeping", "active", "empty", or "relaxing" parameters by selecting the corresponding "Edit" button 2102, which then causes the "Edit Comfort-Climate" popup menu 2110 to appear. The "Edit Comfort-Climate" popup menu 2110 allows the user to edit the temperature set-points for the selected "sleeping", "active", "empty", or "relaxing" parameters by using the arrows 2111, 2112, 2114, 2115. See column 31, lines 40-60 and FIG. 21. Alles teaches that selecting the "Return" selection 2121 saves the changes and causes the popup menu 2110 to disappear. See column 32, lines 51-52. Likewise, Alles teaches that selecting the "Return" selection 2172 of menu 2100 causes the popup menu 2100 to disappear and return to the menu shown in Figure 20.

As can readily be seen, these menus provide an intuitive way for the user to program the regular schedule of Alles. They are clearly not related or used to program or set an override to the regular schedule of Alles. As such, the cited portion of Alles cannot be deemed to teach the method step of providing two or more schedule override choices to a user via a user interface, as is recited in claim 1.

In addition, claim 1 recites the step of automatically returning to the regular schedule. Since the cited portion of Alles does not appear to relate to schedule overrides that override the regular schedule of Alles, the cited portion of Alles cannot be deemed to teach, disclose or suggest the step of automatically returning to the regular schedule, as recited in claim 1.

The Examiner asserts that it would have been obvious for one of ordinary skill in the art to add a manual override such as that taught by Liebl to the system and method of Alles to provide a time-saving benefit. As discussed above, the cited portion of Alles does not teach the step of providing two or more schedule override choices to a user via the user interface. Liebl does not appear to teach such a step. Instead, Liebl appears to teach a manual override by having the user simply change the current set-point temperature. Liebl does not appear to teach providing any schedule override choices to a user, and more particularly, to providing two or more schedule override choices to a user via the user interface. Thus, even if one were to combine the teachings of Alles and Liebl, one would not arrive at the claimed method.

Regarding dependent claims 3 and 5-10, the Examiner asserts that Alles teaches displaying a natural language schedule override choice that a user inputs. Applicants respectfully disagree. As discussed above, Alles appears to provide various Comfort-Climate parameters (e.g. "sleeping", "active", "empty", and "relaxing") that are used for intuitively programming the regular schedule temperature set-points. Neither Alles nor Liebl appear to teach or suggest displaying a natural language schedule override choice for a user.

Independent claim 11 recites a controller that includes a programmable regular schedule, and a user interface adapted and configured to provide two or more schedule override choices to a user, and for accepting the selection of one of the two or more schedule override choices from the user. Claim 11 further recites that the controller enters an override mode for overriding the regular schedule based on the user responses provided by the user interface, and the controller automatically returns to the regular schedule when the selected override choice expires. For at least the reasons set forth above with respect to claim 1, neither Alles nor Liebl, alone or in combination, teach or suggest a controller having the recited elements.

Independent claim 21 recites a controller having a programmable regular schedule, and a user interface adapted and configured to provide two or more schedule override choices to a user, and for accepting the selection of one of the two or more schedule override choices from the user. Independent claim 21 further recites that the two or more schedule override choices includes a schedule override choice of “Come Home Early”, and that the regular schedule is temporarily overridden based on the user response provided via the user interface. For at least the reasons set forth above with respect to claim 1, neither Alles nor Liebl, alone or in combination, teach or suggest a controller having the recited elements.

Independent claim 22 recites a controller that includes a programmable regular schedule, and a user interface that is adapted and configured to provide two or more schedule override choices to a user, and for accepting the selection of one of the two or more schedule override choices from the user. Independent claim 22 further recites that one or more schedule override choices includes a schedule override choice of “Come Home Late”, and that the regular schedule is temporarily overridden based on the user responses provided by the user interface. For at least the reasons set forth above with respect to claim 1, neither Alles nor Liebl, alone or in combination, teach or suggest a controller having the recited elements. Further, neither Alles nor Liebl teach, disclose or suggest a schedule override choice of “Come Home Late”, as recited in claim 22.

Independent claim 23 recites a controller that includes a programmable regular schedule, and a user interface that is adapted and configured to provide two or more schedule override choices to a user, and for accepting the selection of one of the two or more schedule override choices from the user. Independent claim 23 further recites that the one or more schedule override choices includes a schedule override choice of “Get Up Early”, and that the regular schedule is temporarily overridden based on the user responses provided by the user interface. For at least the reasons set forth above with respect to claim 1, neither Alles nor Liebl, alone or in combination, teach or suggest a controller having the recited elements. Further, neither Alles nor Liebl teach, disclose or suggest a schedule override choice of “Get Up Early”, as recited in claim 23.

Independent claim 24 recites a method for temporarily overriding a regular programmable HVAC schedule in a controller having a user interface. The method includes providing a regular HVAC schedule; providing one or more schedule override choices to a user via the user interface; accepting a user selection of one or more of the schedule override choices from the user via the user interface at a first time; and overriding temporarily the regular schedule in an override mode that is based on the selected one or more of the schedule override choices. Independent claim 24 further recites that overriding step begins at a second time that is later than the first time. For at least the reasons set forth above with respect to claim 1, neither Alles nor Liebl, alone or in combination, teach or suggest a controller having the recited elements. Further, neither Alles nor Liebl teach, disclose or suggest beginning an overriding step at a second time that is later than the first time, as recited in claim 24.

For similar reasons to those set forth above, as well as other reasons, independent claims 37, 44 and 50, and the claims dependent therefrom, are also believed to be clearly patentable over Alles and Liebl.

Claims 50-53 are rejected as being unpatentable over Alles in view of Riley. The Examiner asserts that Riley teaches energy saving schedule override menu choices for a user, referring to Fig. 1A and column 15, lines 22-50. Applicants respectfully disagree. Riley appear to teach energy savings variables 140 that the user can add to the saved regular schedule. Riley specifically teaches "user interface control 110 shown in FIG. 1A provides a convenient manner for the user to manipulate some of the variables used in the method of FIG. 2, by acting on user input 50 to interact directly with the program in the memory 40." Emphasis added; see column 15, lines 6-10. Moreover, and as discussed above, Alles does not appear to teach or suggest modifying a schedule to an override mode that begins at a later time, and does not change the regular schedule. In addition, neither Alles nor Riley appear to teach, disclose or suggest accepting a start time, end time or duration, and a temperature response from the user for a schedule override menu choice. Thus, any combination of Alles and Riley must also fail to teach or suggest such method steps.

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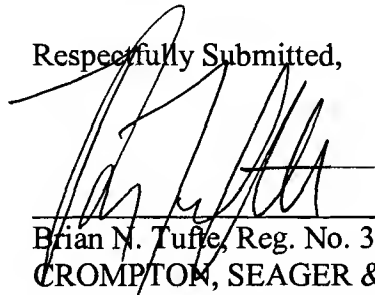
Claims 59 and 60 are rejected as being unpatentable over Riley in view of Alles. The elements of claims 59 and 60 have been added to independent claim 58. The Examiner acknowledges that Riley does not teach or suggest a displayed indication being provided by a user but asserts that Alles teaches indications are provided by a user via mode creation and editing mode capabilities concerning temperature, time and naming of modes. Alles appears to teach various Comfort-Climates parameters that are used for programming the regular schedule, but does not appear to teach or suggest any indications regarding the physical elements of the structure (e.g. the open or closed status of windows). Thus any combination of Riley and Alles must also fail to teach or suggest the elements of the claim.

Claims 61-64 are rejected as being unpatentable over Riley in view of Ehlers. Claim 65 is rejected as being unpatentable over Riley in view of Ehlers as applied to claim 61, and further in view of Roy (US 5,257,736). Riley does not appear to teach or suggest the basic elements of independent claim 58 from which claims 61-65 depend. Neither Ehlers nor Roy appear to teach what Riley lacks. Thus, any combination of Riley, Ehlers, and Roy also fails to teach or suggest the elements of the dependent claims.

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Reconsideration and reexamination are respectfully requested. It is submitted that, in light of the above remarks, all pending claims are now in condition for allowance. If a telephone interview would be of assistance, please contact the undersigned attorney at 612-359-9348.

Respectfully Submitted,



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